

Claims

Claim 1. A system for softening and dispensing a frozen confectionary comprising:

a bag-shaped container having an outlet port, the bag-shaped container including the frozen confectionary;

a frozen confectionary softening unit for softening the frozen confectionary in the bag-shaped container by application of pressure and in the absence of heat application thereto;

a dispensing unit for dispensing the frozen confectionary from the outlet port, the frozen confectionary having been softened by the pressure application operation;

a bag-shaped container transporting means for transporting the bag-shaped container to the frozen confectionary softening unit for a softening operation and to the dispensing unit to which the pressure is applied for a dispensing operation;

a species recognition means for recognizing the species of the frozen confectionary provided in the bag-shaped container; and

a control unit for controlling the frozen confectionary softening unit so as to function based on appropriate pre-stored conditions for the softening operation, depending on the recognized species of the frozen confectionary.

Claim 2. The system for softening and dispensing a frozen confectionary as claimed in claim 1, wherein the frozen confectionary softening unit comprises a crushing means which moves reciprocatingly, the reciprocating movement

applying an impact to the frozen confectionary in the bag-shaped container.

Claim 3. The system for softening and dispensing a frozen confectionary as claimed in claim 2, wherein the control unit controls the frozen confectionary softening unit by changing the number of impacts applied to the frozen confectionary by the crushing means, and by adjusting a feeding stroke of the crushing means.

Claim 4. The system for softening and dispensing a frozen confectionary as claimed in any of claims 1 to 3, wherein the control unit controls the frozen confectionary softening unit by adjusting the transporting movement of the bag-shaped container transporting means with respect to the bag-shaped container.

Claim 5. The system for softening and dispensing a frozen confectionary as claimed in any of claims 1 to 4, further comprising a temperature sensor for detecting a temperature of the frozen confectionary during the softening operation by the frozen confectionary softening unit, the control unit additionally controlling the softening operation of the frozen confectionary softening unit, based on the temperature detected.

Claim 6. A system for softening and dispensing a frozen confectionary comprising:

a bag-shaped container having an outlet port, the bag-shaped container

including therein the frozen confectionary;

a frozen confectionary softening unit for softening the frozen confectionary in the bag-shaped container by application of pressure and in the absence of heat application thereto;

a dispensing unit for dispensing the frozen confectionary from the outlet port, the frozen confectionary having been softened by the pressure application operation;

a bag-shaped container transporting means for transporting the bag-shaped container to the frozen confectionary softening unit for a softening operation at and to the dispensing unit for a dispensing operation;

a softened degree detection unit for detecting the degree to which the frozen confectionary has been softened, based on the operation of the frozen confectionary softening unit; and

a control unit for controlling the softening operation by the frozen confectionary softening unit, in the absence of heat application, depending on the degree of softness of the frozen confectionary detected by the softened degree detection unit.

Claim 7. The system for softening and dispensing a frozen confectionary as claimed in claim 6, wherein the frozen confectionary softening unit comprises a crushing means which moves reciprocatingly, the reciprocating movement applying an impact to the frozen confectionary in the bag-shaped container.

Claim 8. The system for softening and dispensing a frozen confectionary as

claimed in claim 7, wherein the softened degree detection unit comprises an operation rate detection means which detects the rate of the reciprocating movement of the crushing means, the softened degree detection unit determining whether an appropriate softening process is progressing when a time required for the crushing operation during the reciprocating movement of the crushing means is longer than a predetermined time.

Claim 9. A method for softening and dispensing a frozen confectionary comprising:

a frozen confectionary softening step for softening the frozen confectionary contained in a bag-shaped container having an outlet port by application of impact to the bag-shaped container and in the absence of heat application to the frozen confectionary, the softening step occurring at the same time with the bag being transported;

a dispensing step for dispensing the frozen confectionary from the outlet port of the bag-shaped container, the dispensing step following the frozen confectionary softening step, the frozen confectionary having been softened by the pressure application operation to the bag-shaped container; and

a species recognition step for recognizing the species of the frozen confectionary which is provided in the bag-shaped container, the species recognition step being carried out prior to the frozen confectionary softening step, the operation in the frozen confectionary softening step being controlled based on the conditions for the softening operation, depending on the recognized species of the frozen confectionary.

Claim 10. A method for softening and dispensing a frozen confectionary comprising:

a frozen confectionary softening step for softening the frozen confectionary contained in a bag-shaped container having an outlet port, by application of impact and in the absence of heat application to the frozen confectionary, the softening step occurring at the same time with the bag being transported;

a dispensing step for dispensing the frozen confectionary from the outlet port of the bag-shaped container, the dispensing step following the frozen confectionary softening step, the frozen confectionary having been softened by the application of pressure to the bag-shaped container; and

a softened degree detection step for detecting the degree to which the frozen confectionary has been softened during the frozen confectionary softening step, the operation in the frozen confectionary softening step being controlled depending on the degree of softness of the frozen confectionary detected in the softened degree detection step.